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Raleigh, NC 27606  
<http://agilesci.com>



### **Fast Facts**

Founders:	John Cavanagh Christian Melander
Date Founded:	2007
Employees:	5
Headquarters:	Raleigh, NC
Revenue:	N/A
University:	North Carolina State University
Federal Funding Agency:	National Institutes of Health National Science Foundation
Initial Research Funding:	\$4M

Agile Sciences, Inc. provides commercial solutions to industries plagued by the effects of biofilms.

A bacterial biofilm is a community of bacterial cells that are attached to a surface and are protected by an extracellular matrix, making them exceptionally hardy and difficult to deal with. Biofilms that form in the human body are up to ten thousand times more resistant to antibiotics and immune systems than free-floating bacteria. In agriculture, every year billions of dollars of crops are lost due to the formation of biofilms. Industrial needs for effective biofilm dispersion include surface coatings and cleansing products.

Agile Sciences technology is based on a family of novel organic compounds that have potent anti-biofilm properties. The molecular architecture of the compounds is highly tunable for addressing specific needs in a diverse array of product markets.

### **The Story Behind the Company**

Agile Sciences was co-founded by North Carolina State University professors Christian Melander and John Cavanagh. Dr. Melander focuses on defining small molecules that inhibit and disperse bacterial biofilms and Dr. Cavanagh is an expert in protein structural biology, particularly in how bacteria are able to protect themselves. It was through a conversation with each other about their work that they each realized they needed the other scientist's expertise to complement and complete their own work. The ensuing collaboration resulted in the technology behind Agile Sciences.



*The Best in Bartonella Testing*

7030 Kit Creek Rd, Ste 270  
Research Triangle Park, NC 27709  
[www.galaxydx.com](http://www.galaxydx.com)

#### **Fast Facts**

Founders:	Edward Breitschwerdt, Ricardo Maggi
Date Founded:	2007
Employees:	6
Headquarters:	Research Triangle Park, NC
Revenue:	N/A
University:	North Carolina State University
Federal Funding Agency:	National Institutes of Health
Initial Research Funding:	\$165,000

Galaxy Diagnostics offers the most sensitive and specific test for the detection of *Bartonella* species bacteria. Bartonella is a hard-to-detect bacteria that is linked to both acute and chronic illnesses in humans and animals. The company's Bartonella ePCR™ testing platform combines an enrichment culture in its patented BAPGM (Bartonella Alpha Proteobacteria Growth Medium) medium with state-of-the-art molecular detection to significantly increase the odds of detecting the presence of *Bartonella* species bacteria in a given patient sample.

#### **The Story Behind the Company**

Bartonella Alpha Proteobacteria Growth Medium (BAPGM) was envisioned, refined and patented by research scientists at the North Carolina State University College of Veterinary Medicine's Vector Borne Disease Diagnostics Laboratory, including company co-founders Dr. Edward Breitschwerdt and Dr. Ricardo Maggi. The scientists were working to enhance the growth of these highly fastidious bacteria from animal and human patient samples. The NCSU-CVM team was able to overcome the low detectability problem faced by existing methods by combining a BAPGM enrichment culture step with highly sensitive PCR and sequence verification.

Dr. Breitschwerdt, internist and professor of medicine and infectious diseases at NCSU-CVM, is co-director of the Vector Borne Disease Diagnostic Laboratory which has been testing animals for vector borne infections, including Bartonella since 1984. Breitschwerdt's research at the NCSU Intracellular Pathogens Research Laboratory has produced significant research findings concerning the medical importance of Bartonella and other emerging infectious disease pathogens. Dr. Maggi, assistant professor of medical microbiology at NCSU-CVM, played an integral role in the development of Galaxy Diagnostics' proprietary diagnostic technology and directs all assay development and quality control activities for both Animal and Human Health Services.

The work of the team at NCSU-CVM was supported by grants from the National Institutes of Health.



7202 Doverton Ct.  
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[www.imagineoptix.com](http://www.imagineoptix.com)



### **Fast Facts**

Founders:	Michael Escuti Jason Kekas
Date Founded:	2004
Employees:	3
Headquarters:	Raleigh, NC
Revenue:	N/A
University:	North Carolina State University
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$100,000

ImagineOptix ("IO") is a development, licensing and manufacturing company. The company is commercializing patented optical thin-films and related products. One initial application area is to improve video projector devices, enabling the world's smallest, lowest-cost and most battery efficient projectors to be imbedded in many consumer electronics devices such as cell phones and laptops. IO is also applying their technologies to revolutionize telecommunications markets, other optical consumer electronics markets, as well as military and industrial equipment markets.

### **The Story Behind the Company**

ImagineOptix is commercializing technology developed by Dr. Michael Escuti, associate professor of electrical and computer engineering at North Carolina State University where he leads research within the Opto-electronics and Lightwave Engineering Group. Dr. Escuti is a leading liquid crystal display expert pioneering the development of polarization-independent devices. His research has shown how polarization gratings, as well as devices and applications based on them, can solve problems in optics that had been previously thought unsolvable. His work has been supported by the National Science Foundation.



112 South Duke Street  
Durham, North Carolina 27701-2852  
[www.physcient.com](http://www.physcient.com)



### **Fast Facts**

Founders:	Hugh C. Crenshaw, Charles A. Pell, Jeffrey P. Williams
Date Founded:	2007
Employees:	2
Headquarters:	Durham, NC
Revenue:	N/A
University:	North Carolina State University
Federal Funding Agency:	National Institutes of Health National Science Foundation
Initial Research Funding:	\$241,355

Physcient is developing hand-held, robotic surgical instruments to help patients hurt less and heal faster. The company combines modern automation and unique knowledge of surgical biomechanics to develop minimally traumatic surgical devices.

Physcient's first product, called a "thoracic retractor," is used to gain surgical access for open-chest surgical procedures — lung and heart surgeries. Rather than develop complicated minimally invasive approaches, Physcient has demonstrated in pre-clinical trials that many of the advantages of minimally invasive surgeries (less pain, less trauma, improved respiratory function) can be delivered by improving the thoracic retractor.

### **The Story Behind the Company**

Physcient was founded to commercialize technology co-developed by North Carolina State University mechanical engineer Greg Buckner and a colleague, Dr. Gil Bolotin of Haifa, Israel. Their pioneering work was based on the premise that surgery could be made less traumatic if the surgical instrument was smarter. Buckner, who is a professor in the Department of Mechanical and Aerospace Engineering and Director of the Electro-Mechanics Research Laboratory at NCSU, serves on Physcient's Scientific Advisory Board.

The fundamental research behind Physcient's technologies conducted at NCSU was supported by grants from the National Institutes of Health and the National Science Foundation.